

GOLOVACHEVA, V.Ya., ZHOVTYY, M.F.

Isolation of the causative agents of bacterial infections from the ectoparasites of mammals in southeastern Transbaikalia and the Far East. Izv. Irk. gos. nauch.-issl. protivochum. inst. 21:135-147 199.

(MIRA 14:1)

(SIBERIA, -EASTERN PARASITES MAMMALS)

(BACTERIA, PATHOGENIC)

OSIPENKO, I.I.; ZHOVITYI, I.F.

Seasonal changes in the histostructure of the skin amon some  
rodents species of Transbaikalia. Izv.Irk.gos.nauch.-issl.  
protivochum.inst. 20:55-66 '59. (MIRA 13:7)  
(TRANSBAIKALIA--RODENTIA) (SKIN)

ZHOVTIY, I. F.

"The role of Acad. E. N. Pavlovskiy in the treatment of the problem of plague parasitology." p. 235

Desyatoye Soveshchaniye po parazitologicheskim problemam i prirodnoochagovym bolezniam. 22-29 Okiyabrya 1959 g. (Tenth Conference on Parasitological Problems and Diseases with Natural Foci 22-29 October 1959), Moscow-Leningrad, 1959, Academy of Medical Sciences USSR and Academy of Sciences USSR, No. 1 254pp.

Antiplague Inst. of <sup>S</sup>iberia and the Far East/Irkutsk

ZHOVTIY, I. F., TIMOFEEVA, L. A., MENIPELOV, N. V.

"The discovery of certain bacterial infections with natural foci in the Transbaykal pestilential focus." p. 204.

Desyatoye Soveshchaniye po parazitologicheskim problemam i prirodnoochagovym boleznyam. 22-29 Oktynabrya 1959 g. (Tenth Conference on Parasitological Problems and Diseases with Natural Foci 22-29 October 1959), Moscow-Leningrad, 1959, Academy of Medical Sciences USSR and Academy of Sciences USSR, No. 1 254pp.

Antiplague Inst. of Siberia and the Far East/Irkutsk

ZHOVTYY, I.F.

New finds of the stable fly *Stomoxys calcitrans* L. in Siberia and  
the Far East. Izv. Irk. gos. nauch.-issl. protivochum. inst. 21:  
348-350 '59. (MIRA 14:1)

(SIBERIA, EASTERN--STABLE FLIES)

ZHOVTYY, I.F.; YEMEL'YANOVA, N.D.

Carriers of plague infection in the Mongolian People's Republic.  
Izv. Irk. gos. nauch-issl. protivochum. inst. 22:72-107 '59.

(MIRA 14:10)

(MONGOLIA—PLAGUE)  
(INSECTS AS CARRIERS OF DISEASE)

TIMOFEEVA, L.A.; ZHOVITYI, I.F.; NEKIPELOV, N.V.; GOLOVACHEVA, V.Ya.;  
GORDIYENKO, G.P.; DUBOVIK, N.M.; KOROBENNIKOVA, A.I.; MIRONOVA,  
I.P.; MERINOV, S.P.; MATAFONOVA, Z.G.; SHVEDKO, L.P.;  
VASINOVICH, M.I.

Search for plague and other epizootic diseases in a Transbaikalian  
plague focus. Report No.2. Izv.Irk.gos.nauch.-issl.protivochum.  
inst. 20:3-13 '59. (MIRA 1):7)

(TRANSBAIKALIA--RODENITA--DISEASES AND PESTS)

GRANINA, A.N., otv. za vypusk; DOMARADSKIY, I.V., otv. red.;  
SILINSKIY, P.I., otv. red.; ZHOVITYY, I.P., red.;  
NEKIPELOV, N.V., red.; SKALON, V.N., red.; TRUSHKINA, T.M.,  
tekhn. red.

[Collection of works on biology, 1960] Biologicheskii sbornik  
1960 g. Irkutsk, Vostochno-Sibirskoe otd-nie geogr. ob-va  
SSSR, 1961. 285 p. (MIRA 15:11)

(BIOLOGY)



NIKOLAYEV, N.I., otv. red.; LENSKAYA, G.N., zam. otv. red.; PASTUKHOV, B.N., zam. otv. red.; FENYUK, B.K., zam. otv. red.; ISHUNINA, T.I., red.; AKIYEV, A.K., red.; DOMARADSKIY, I.V., red.; DROZHEVKINA, M.S., red.; ZHOVTYY, I.F., red.; KOROBKOVA, Ye.I., red.; KRAMINSKIY, V.A., red.; KRATINOV, A.G., red.; LEVI, M.I., red.; LOBANOV, V.N., red.; MIRONOV, N.P., red.; PETROV, V.S., red.; PLANKINA, Z.A., red.; PYPINA, I.M., red.; SMIRNOV, S.M., red.; TER-VARTANOV, V.N., red.; TIFLOV, V.Ye., red.; FEDOROV, V.N., red.; PARNES, Ya.A., red.; PRONINA, N.D., tekhn. red.

[Especially dangerous natural focus infections] Osobo opasnye i prirodnoochagovye infektsii; sbornik nauchnykh rabot protivochumnykh uchrezhdenii. Moskva, Medgiz, 1962. 271 p.

(MIRA 16:5)

(COMMUNICABLE DISEASES)

ZHOYEE, Ivatta [Joyce, Yvette]

An unprecedented strike. Vsem. prof. dvizh. no.2:31-37 F '61.

(MIRA 14:7)

(Belgium--Strikes and lockouts)

ZHOZHAKASHVILI, V., kand.tekhn.nauk; BILIK, P., inzh.

A single system controls hundreds of items. WFO 2 no.11:18-19  
H 60. (MIRA 13:11)

(Remote control)

ZHOZHAKASHVILI, V. A. and TUTEVICH, V. N.

"Commutator Switch Composed of Magnetic Elements with a Square Hysteresis Loop," Avtomat. i Telemekh., No.1, 1954

~~TELETYPE~~

USSR/Electronics -- Telecontrol

FD-2631

Card 1/1 : Pub. 41-17/21

Author : Zhozhiakashvili, V. A. and Mityushkin, K. G., Moscow

Title : Magnetic elements with a rectangular hysteresis loop in telecontrol installations

Periodical : Izv. AN SSSR, Otd. Tekh. Nauk 4, 147-148, Apr. 1955

Abstract : Considers the need for dependable, high speed contactless impulse distributors in telecontrol engineering. Proposes magnetic elements with rectangular hysteresis loops be used. Discusses differences between telecontrol rectangular hysteresis loop distributors and computers. Defines various impulses. Schematic diagram.

Institution :

Submitted : February 19, 1955

USSR/Electricity - Reference

Card 1/1 Pub. 10-8/11

FD-1672

Author : Zhozhikashvili, V. A. (Moscow)

Title : Decipherers of remote-control devices based on magnetic elements with rectangular hysteresis loops

Periodical : Avtom. i telemek., Vol. 16, 87-95, Jan-Feb 1955

Abstract : The author investigates the various methods for constructing contactless magnetic decipherers and explains their deficiencies. He proposes a procedure for constructing contactless decipherers based on magnetic elements with rectangular hysteresis loops. Use is made of symbolic descriptions for the circuits of the decipherer, which are similar to the description of primary circuits of relay-contact decipherers. He investigates the protective properties of the decipherers worked out. The author concludes that the construction of contactless magnetic decipherers by the method of combination on windings permits economies in the use of the elements of the circuit, and that such decipherers are free from complex parametric dependences. No references.

Institution : --

Submitted : April 17, 1954

*Translation M-940, 23 Jan 56*

USSR/Automatics and telemechanics

FD-2657

Card 1/2      Pub. 10-4/15

Author      : Zhozhikashvili, V. A., and Mityushkin, K. G.

Title      : Operation of counter (digital) switching circuits on the basis of magnetic elements with rectangular hysteresis loops in remote-control devices

Periodical   : Avtom. i telem. 16, Jul-Aug 1955, 356-363

Abstract    : The authors consider the peculiarities of the operation of counter switching circuits using magnetic elements with rectangular hysteresis loops in remote-control devices. They formulate the requirements posed by remote-control devices upon those circuits which are used as pulse distributors. They disclose the negative influence of parasitic pulses upon the operation of the circuit and propose a method for their elimination. They consider variants of the distributor circuits based on elements with rectangular hysteresis loops, which create the possibility of contactless rapid-action distribution. Four references, 1 USSR

Card 2/2

FD-2657

(V. N. Tutevich and V. A. Zhozhikashvili, "Commutator executed on the basis of magnetic elements with rectangular hysteresis loops," *ibid.* 15, No 1, 1954) and 3 West (e.g. A. Wang, "Magnetic storage and delay line," *J. Appl. Phys.* 1950; J. Rajchman, "Myriabit magnetic core matrix memory," *Proc. IRE*, 1953; E. Sands, "Behavior of rectangular hysteresis loop magnetic materials under current pulse conditions," *Proc. IRE*, 1952).

Institution :

Submitted : April 5, 1955



GAVRILOV, M.A., otvetstvennyy redaktor; IL'IN, V.A., redaktor; ZHOZHKASHVILI, V.A., redaktor; PETROVSKIY, A.M., redaktor; MALOV, V.S., redaktor; OSTIANU, V.M., redaktor; POBEDIMSKIY, V.V., redaktor izdatel'stva; KISILEVA, A.A., tekhnicheskii redaktor

[Remote control in the national economy] Tlemekhanizatsiia v narodnom khoziaistve; materialy soveshchaniia. Moskva, Izd-vo Akademii nauk SSSR, 1956. 481 p. (MLRA 9:8)

1. Soveshchaniye po telemekhanizatsii v narodnom khoziaistve SSSR. Moscow, 1954.

(Remote control) (Telemetry)

ZHOZHAKASHVILI, V. A.; Mityushkin, K. G.

"Use of Hysteretic Magnetic Elements for the Production and Reception of Remote Control Signals" (Primeneniye gisterezisnykh magnitnykh elementov dlya obrazovaniya i priyema signalov teleupravleniya) from the book Telemechanization in National Economy, pp. 159-162, Iz. AN SSSR, Moscow, 1956

(Given at meeting held in Moscow, 29 Nov to 4 Dec 54 by Inst. of Automatics and Telemechanics AS USSR)

80442

13,4000

SOV/112-60-2-4.1029

Translation from: Referativnyy zhurnal Elektrotehnika, 1960, Nr 2, p 216 (USSR)

AUTHORS: Zhozhiakashvili, V.A., Mityushkin, K.G.

TITLE: Noncontact Telecontrol and Remote Signal System Devices on Magnetic Elements <sup>9</sup>

PERIODICAL: Tr. Vses. n.-i. in-ta elektroenerg., 1958, Nr 7, pp 56 - 77

ABSTRACT: The problems of raising the technical and operational characteristics of telecontrol (TC) - telesignal (TS) devices are discussed. It is pointed out that from this viewpoint the use of the noncontact equipment is very rational in tele-mechanical installations, because this equipment makes it possible to solve the problems of higher reliability, speed of operation and liquidation of attendance. TC-TS devices constructed by TsNIEL with the use of magnetic amplifiers and magnetic elements with a square hysteresis loop are briefly described. Two TC-TS devices of sporadic action built according to the distributive principle with a time selection are described.

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80442

SOV/112-60-2-4.1029

Noncontact Telecontrol and Remote Signal System Devices on Magnetic Elements

In the first device magnetic amplifiers<sup>2</sup> operating by the relay principle are used as output elements, and telephone selectors are used as distributors. In the second device distributors are built on magnetic elements with a square hysteresis loop. The device is fed with an alternating voltage of 25 cycles from a frequency divider. Starting devices are of a transformer type. The selection interval is created by stopping for the desired time the transmission of the distributors pulses from the controlled point into the line. A TC-TS device of a continuous, cyclic action with a possibility of a two-way transmission, command and information series in one cycle of switching over the distributor is described. The distributor is built on magnetic elements with a square hysteresis loop and magnetic amplifiers are used as output elements. The selection is performed by transmitting a command pulse on the desired step of the distributor. To secure the synchronization of distributors a common alternating current network is used for both the control and controlled points. The pulses from these points are shifted in the line through 180° on account of using different AC halfwaves for the movement of distributors. 12 illustrations, 2 references.

Card 2/2

V.Ye.Kh.

*Zhoshikashvili, U.A.*

**PART I BOOK INTRODUCTION 207/2781**

Skudskaya znan. SSSR. Institut avtomatiki i telemekhaniki  
Proyektiruyemye telemekhaniki (Industrial Telemekhanics) Moscow, 1960.  
248 p. Krata ali inserted. 4,000 copies printed.

Resp. Ed.: M.A. Gavrilov; Ed. of Publishing House: Ye.N. Orlov'yev;  
Tech. Ed.: M.O. Shvachenko.

**PURPOSE:** This collection of articles is intended for scientific  
workers and engineers in the field of telemekhanics.

**COVERAGE:** The book contains studies completed in 1957 by the  
staff of the Institut avtomatiki i telemekhaniki AN SSSR  
(Institute of Automation and Telemekhanics, Academy of Sciences  
USSR). They include telemekhanic equipment, particularly con-  
tactless systems and systems for distributed equipment, the  
design of telemekhanic signal systems, problems of bridge  
ministry in relay circuitry, and methods of synthesizing  
relay circuitry using contactless components. Abnormalities  
are mentioned. Most of the articles are accompanied by references.

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AVAILABLE: Library of Congress (SF 213.A325)	
Card 1/4	

20/200/10  
7-20-60

ACCESSION NR: AT4031774

S/0000/63/000/000/0237/0241

AUTHOR: Zhozhikashvili, V. A.; Raykin, A. L.

TITLE: Determination of the suitable operating conditions of a system reserve unit

SOURCE: AN SSSR. Strukturnaya teoriya releynykh ustroystv (Structural theory of relay devices). Moscow, Izd-vo AN SSSR, 1963, 237-241

TOPIC TAGS: control system, automatic control, feedback, relay, reserve unit, system reliability, system design

ABSTRACT: A well-known method for enhancing system reliability is the introduction of structural redundancy (in specific cases, the duplication of its elements or units). In the present article, a system is considered which consists of a basic and stand-by (reserve) unit, and the mission of which is the uninterrupted fulfillment of its assigned functions. With the basic unit functioning normally, the stand-by is in the condition of 'cold' reserve, characterized by an outage time distribution law differing from the outage time distribution of the basic equipment, and is put into operation only in the event of a failure of the basic unit. Outages of the working unit are signaled and eliminated by service personnel. It is further assumed that there is a fault detector which activates the stand-by switch-on

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elements (Fig. 1 of the Enclosure). Considering, for the sake of simplicity, these supplementary elements to be absolutely reliable, the authors have attempted to determine the advantages of this method of stand-by (reserve), as they result from the less exacting conditions of the stand-by unit, as well as its shortcomings, which are connected with the lack of information regarding the state of the stand-by unit elements when the basic equipment is operating properly. The discussion concerns systems, the operational "ready" time of which is negligibly small. In a general case, the solution of the problem presupposes arbitrary time distribution laws for the faults of the stand-by and basic units and of the fault restoration times. In this paper, a uniform case is considered, in which these distribution laws have a constant conditional probability density, with instantaneous switch-on of the reserve equipment. With this formulation, the behavior of the system represents a random Markov process with four states, designated as follows: (11) - both units in working order, with the basic unit fulfilling its assigned functions; (01) - basic unit "but" and under repair, with the stand-by unit in order and fulfilling the functions of the basic; (10) - basic unit in order and functioning properly, with the stand-by unit "but", but with no information to that effect; (00) - both units out, indicating a failure of the entire system. The possibilities of transitions from one state to the other and their conditional probability \*

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densities are indicated in Fig. 2 of the Enclosure. The author has designated the probabilities of the system being in these states as time functions  $P_{11}(t)$ ,  $P_{10}(t)$ ,  $P_{01}(t)$ , and  $P_{00}(t)$ , respectively, and has also introduced the notation  $\lambda_1$  and  $\lambda_2$  for the intensities and conditional probability densities of faults in the basic and stand-by units, respectively, and  $\mu$  = the speed of fault restoration. Thus, a formula is derived

$$T_{\text{mean}} = \frac{\lambda_2 \mu}{\lambda_1 (\rho_1 + \lambda_1) (\rho_2 + \lambda_1)} - \frac{\lambda_1 \lambda_2 (\rho_1 + \lambda_1 + \mu)}{\rho_1^2 (\rho_1 + \lambda_1) (\rho_2 - \rho_1)} + \frac{\lambda_1 \lambda_2 (\rho_2 + \lambda_1 + \mu)}{\rho_2^2 (\rho_2 + \lambda_1) (\rho_2 - \rho_1)} - \frac{\lambda_1^2 (\rho_1 + \rho_2)}{\rho_1^2 \rho_2^2} \quad (1)$$

for the mean failure-free operating time of a duplicated (stand-by) system as a function of three parameters: the intensity values of the outages of the basic and stand-by units and the speed of restoration. An estimation of this type makes it possible to compare achievable reliability with the reserve facilities employed in different manners. The author has called attention to the need to extend this method to cases of arbitrary fault time distribution laws, since this would permit consideration of the effect of element aging. Orig. art. has: 3 figures and 13 formulas.

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ACCESSION NR: AT4031774

ASSOCIATION: none

SUBMITTED: 14Nov63

DATE ACQ: 16Apr64

ENCL: 02

SUB CODE: IE EC

NO REF SOV: 000

OTHER: 003

Card 4/6

ACCESSION NR: AT4031774

ENCLOSURE: 01

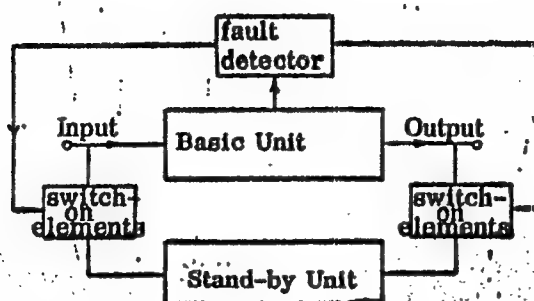


Fig. 1

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ACCESSION NR: AT4031774

ENCLOSURE: 02

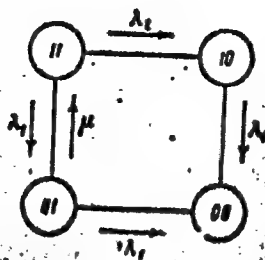


Fig. 2

Card 6/6

BILIK, R.V.; ZHOZHAKASHVILI, V.A.; MITYUSHKIN, K.G.;  
~~FRANGISHVILI, I.V.~~; SOTSKOV, B.S., otv. red.

[Contactless elements and remote control systems with  
time division of signals] Beskontaktnye elementy i si-  
stemy telemekhaniki s vremennym razdeleniem signalov.  
Moskva, Nauka, 1964. 415 p. (MIRA 17:9)

1. Chlen-korrespondent AN SSSR (for Sotskov).

RAYNES, Roman Lazarevich; GORYANOV, Oleg Aleksandrovich. Prinimal  
uchastiye ZHOZHIKASHVILI, V.A., kand. tekhn. nauk;  
SUKHOPRUDSKIY, N.D., kand. tekhn. nauk, retsenzent  
YURASOV, A.N., red.

[Remote control] Teleupravlenie. Izd.2., perer. Moskva,  
Energia, 1965. 535 p. (MIRA 18:2)

L 39438-66 ENI(1)/BRP(1) UP(6) 06/88/SD/CS  
 ACC NR: AT6002984  
 SOURCE CODE: UR/0000/65/000/000  
 AUTHOR: Bilik, R. V.; Zhodzikhavili, V. A.; Kartuzov, Ye. V.  
 ORG: none  
 TITLE: Ferrite-diode logical elements for remote control and telemetry  
 SOURCE: Vsesoyuznoye soveshchaniye po magnitnym elementam avtomatiki i vychislitel'noy tekhniki. 9th, Yerevan, 1963. Magnitnyye tsifrovyye elementy (Magnetic digital elements); doklady soveshchaniya. Moscow, Izd-vo Nauka, 1965, 156-164  
 TOPIC TAGS: logical element, remote control, telemetry  
 ABSTRACT: Several ferrite-core-plus-diode logical elements and switching circuits are described; the experimental elements used VT-2 and K-65, 10 x 6 x 2.5-mm ferrite cores. A 4-core AND-gate is briefly described, and the plots of power, current, and current ratio vs. supply voltage for 2-10 inputs are presented. A 3-core NOT gate (inverter) is briefly described. A circuit diagram is shown that carries out the Scheffer operation:  $f = \overline{x \wedge y} = x \vee \overline{y}$ . Also, a circuit diagram for a

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NOR operation is shown. Of combination logical elements, the inhibition, implication, nonequivalence  $[ f = (\bar{x} \wedge y) \vee (x \wedge \bar{y}) ]$ , and multifunctional elements are briefly covered. Also, principal circuits and relations for the dynamic trigger, count trigger, and single-digit code converter are given. Orig. art. has: 15 figures and 15 formulas.

SUB CODE: 13, 09 / SUBM DATE: 23Apr65 / ORIG REF: 002

Card 2/2MLP

L 40239-66 EWT(d)/EWP(v)/EWP(k)/EWP(h)/EWP(1) BC

ACC NR: AP6021400

SOURCE CODE: UR/0103/66/000/006/0188/0199

AUTHOR: Zhozhi Kashvili, V. A. (Moscow); Khorovich, B. G. (Moscow)

ORG: none

TITLE: The computation of some probability characteristics in the information transmission process for a particular class of a centralized control system

SOURCE: Avtomatika i telemekhanika, no. 6, 1966, 188-199

TOPIC TAGS: stochastic process, function analysis, probability theory, memory core, data processing system, data transmission, information theory

ABSTRACT: In this paper, the authors analyze an instance when to a central point in a closed-loop control system there is to be transmitted only an alerting signal to the effect that a pulse has appeared at the output of the source (the information source being, in this case, a sensing unit) while the parameters of the pulse itself are of no importance from the point of view of the subsequent processing of the information which it contains. Such an information-collecting system using cyclic telemechanical devices can be realized in one of two ways: with memory units or without them. The selection, therefore, of the optimal system configuration involves the problem of determining the criteria fixing the quality of the data transmission process. A

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ACC NR: AP6021400

method is outlined whereby certain of these criteria can be determined: the probability of structural loss of information and of the acquisition of false messages. A centralized control system which performs the function of counting the number of pulses arising at the sources of the information flow is thus analyzed. The probability factors of a structural information loss and of the receipt of false information are analyzed for a system of this type without memory devices. For systems with memories a determination is made of the upper limit in the estimation of the probability that a structurally-related information loss will occur. Orig. art. has: 8 figures and 45 formulas.

SUB CODE: 09/ SUBM DATE: 20Jul65/ ORIG REF: 001/ OTH REF: 000

Card 2/2

AVEN, O.A.; DVORETSKIY, V.M.; DOMANITSKIY, S.M.; ZALMANZON, L.A.;  
KRASSOV, I.M.; KRUG, Ye.K.; TAL', A.A.; KHOKHLOV, V.A.;  
BULGAKOV, A.A.; DEMIDENKO, Ye.D.; BERMSHTEYN, S.I.; YEMEL'YANOV,  
S.V.; LERNER, A.Ya.; MEYEROV, M.V.; PEREL'MAN, I.I., FITSNER,  
L.N.; CHELYUSTKIN, A.B.; ZHOZHAKASHVILI, V.A.; IL'IN, V.A.;  
AGEYKIN, D.I.; GUSHCHIN, Yu.V.; KATYS, G.P.; MEL'TSER, L.V.;  
PARKHOMENKO, P.P.; MIKHAYLOV, N.N.; FITSNER, L.N.; PARKHOMENKO,  
P.P.; ROZENBLAT, M.A.; SOTSKOV, B.S.; VASIL'YEVA, N.P.; PRANGISHVILI,  
I.V.; POLONNIKOV, D.Ye.; VOROB'YEVA, T.M.; DEKABRUN, I.Ye.

Work on the development of systems and principles of automatic  
control at the Institute of Automatic and Remote Control  
during 1939-1964. Avtom. i telem. 25 no. 6:807-851 Je '64.  
(MIRA 17:7)

ZHOZHAKASHVILI, V.A. (Moskva); SHUMKLER, Yu.I. (Moskva)

Reliability of information nets. Avtom. i telem. 24 no.6:  
824-829 Je '63. (MIRA 16:7)

(Telecommunication)  
(Information theory)

ZHOZHAKASHVILI, V.A. (Moskva); SHMOKLER, Yu.I. (Moskva)

Determination of the mean time of faultless operation of contactless remote control devices. Avtom. i telem. 23 no.7:932-937  
Jl '62. (MIRA 15:9)

(Remote control)

ZHOZHAKASHVILI, V.A. (Moskva); RAYKIN, A.L. (Moskva)

Evaluation of system reliability with damage signaling. Avtom. 1  
telem. 23 no.3:392-397 Mr '62. (MIRA 15:3)  
(Automatic control)

13.2900(1159, 3103)

35456

S/103/62/023/003/013/016  
D201/D301

AUTHORS: Zhozhikashvili, V.A., and Raykin, A.L. (Moscow)  
TITLE: Evaluation of system reliability with fault signalling  
PERIODICAL: *Avtomatika i telemekhanika*, v. 23, no. 3, 1962,  
392 - 397

TEXT: The authors describe the procedure in determining the reliability of a system taking into account the probability of its use at any arbitrary instant  $t$  under the condition that a part of all possible faults in the system can be signalled. The following data are given and assumptions made: 1) The system consists of elements, the faults of which do not affect other elements. 2) The probability of the given system being in operation at instant  $t$  is given by a function  $Y(t)$ . The conditional probability that the system, not in use at instant 0, will begin before  $t$ , is given as function  $X(t)$  3) The faults are determined by the duration of the full operative condition of the system including the time of readiness. 4) The probability distribution of reinstating the signalled and non-signal-

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Evaluation of system reliability ...

S/103/62/023/003/013/016  
D201/D301

led fault are given by functions  $W_1(t)$  and  $W_2(t)$  respectively. 5) Faults occurring during servicing are not counted. 6) The signalling is 100 % reliable. Three cases are possible: a) When it becomes impossible to check the remaining part of the system after the signalled fault had been put right; b) Until the beginning of signalled fault rectification it is possible to check the whole system and to put right any additional faults thus found; c) Same as in (b) but possible only after the signalled fault final rectification. For all three cases the probability of system failure at the end of an arbitrary time interval from the simultaneous effect of all signalled faults is derived and for system (a) the average time of faultless operation of the system for the greatest probability of failure is determined. The following conclusions are reached: 1) The evaluation of the system reliability in the presence of operation control and fault signalling, should be, and is, based on the wider than normal notion of reliability of a continuously operating system. The probability of its failure is related to the probability of its utilization. 2) Such an evaluation may be useful in determining and choosing means of improving the system re-

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Evaluation of system reliability ...

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liability and methods of its utilization. 3) The solved concrete example shows that the average time interval between the failures also depends on the intensity with which the system is being introduced into operation and that of fault rectification. In the limit, by reducing the fault rectification time to zero, a maximum average time between failures may be obtained, determined only by the intensity with which the system is being made operational and by the intensity with which the non-controlled faults occur in the system. There are 3 references: 1 Soviet-bloc and 2 non-Soviet-bloc. The reference to the English-language publication reads as follows: R.H. Wilcox, Serviceability: Complement to Reliability 4th Nation Confer. on Military Electr., 1960.

SUBMITTED: August 5, 1961

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ZHOZHAKASHVILI, V.A., kand.tekhn.nauk; BILIK, R.V., inzh.

Over-all remote control system for irrigation works. Vest.AN SSSR  
31 no.5:75-77 My '61. (MIRA 14:6)  
(Irrigation) (Remote control)

SOV/112-57-5-10844

Translation from: Referativnyy zhurnal. Elektrotehnika, 1957, Nr 5, p 181 (USSR)

AUTHOR: Zhozhikashvili, V. A., Mityushkin, K. G.

TITLE: Application of Hysteretic Magnetic Elements for Formation and Reception of Remote-Control Signals (Primeneniye gisterezisnykh magnitnykh elementov dlya obrazovaniya i priyema signalov teleupravleniya)

PERIODICAL: V sb.: Telemekhaniz. v nar. kh-ve, M., AS USSR, 1956, pp 159-162

ABSTRACT: Methods are considered for formation of remote-control signals of amplitude and time pulse types. A method is described for forming longer intervals by counting a definite number of pulses; a corresponding circuit diagram and an operation oscillogram are presented. Signal reception by controlling input or output circuits of a distributor is examined. A circuit for controlling a distributor in case of a time-pulse code and an oscillogram are presented. Possibilities of practical realization of contactless remote-control systems using rectangular hysteretic loop distributors operating at a rate up

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SOV/112-57-5-10844

Application of Hysteretic Magnetic Elements for Formation and Reception . . . .

to 1,500 pulses per sec are pointed out. Further increase in operation speed is limited mainly by the absence of sufficiently reliable and quick-acting receiving and controlling elements.

N.M.F.

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AUTHORS: Zhozhiakashvili, V. A., Mityushkin, K. G., SOV/30-53-5-11/45  
Candidates of Technical Sciences

TITLE: Contactless Devices for Remote-Control Telecommunication (Beskontaktnyye ustroystva teleupravleniya-telesignalizatsii)

PERIODICAL: Vestnik Akademii nauk SSSR, 1958, Nr 6,  
pp. 74 - 76 (USSR)

ABSTRACT: The Laboratory for Remote-Control of the Institute for Automatics and Telemechanics, AS USSR (Laboratoriya teleupravleniya Instituta avtomatiki i telemekhaniki Akademii nauk SSSR), in collaboration with the Laboratory for Telemechanics of the Central Electrotechnical Scientific Research Laboratory of the Ministry of Electric Power Plants (Laboratoriya telemekhaniki Tsentral'noy nauchno-issledovatel'skoy laboratorii Ministerstva elektrostantsiy) developed contactless remote control systems for sporadic and continuous operation, the main appliance of which consists of magnetic impulse elements with rectangular hysteresis loop. Power is supplied from the a.c. mains with industrial frequency. These devices are able to operate without any substantial modifications with frequencies of 25, 150, and 450 cycles per second, in which case voltage fluctuations of the supply current up to  $\pm 15$  to 20%

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Contactless Devices for Remote-Control Telecommunication-30V/30-59-6-11/45

are permissible. The block diagram of a telecommunication device for sporadic operation is shown in figure 1 and it is subsequently fully described. A similar device was put into operation in the Mosenergo-system. The diagram of a remote-control telecommunication system for continuous operation is shown in figure 2 and followed by a description. A complex remote-control system which carries out the control, signalization and telemetering of a series of parameters by means of a cable pair can be obtained by using the described device together with the impulse-frequency telemetering device developed by the Institute for Automatization and Remote Control. It is judged advisable to work out also more complicated systems of such devices. There are 2 figures.

1. Communications systems--USSR
2. Remote control systems--Design

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*ZHOZHIKASHVILI, V.A.*  
PHASE I BOOK EXPLOITATION

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▼ Soveshchaniye po telemekhanizatsii v narodnom khozyaystve SSSR.  
Moscow, 1954. Telemekhanizatsiya v narodnom khozyaystve;  
materialy soveshchaniya... (Remote Control in the National  
Economy; Materials of a Conference) Moscow, Izd-vo AN SSSR,  
1956. 481 p. 3,000 copies printed.

Sponsoring Agency: Akadmeiya nauk SSSR. Institut avtomatiki i  
telemekhaniki.

Resp. Ed.: Gavrilov, M.A.; Eds: Il'in, V.A., Zhozhikashvili, V.A.,  
Petrovskiy, A.M., Malov, V.S., Ostianu, V.M.; Ed. of Publishing  
House: Pobedimskiy, V.V.; Tech. Ed.: Kiseleva, A.A.

PURPOSE: This book is intended for scientists and engineers engaged  
in the research and development of remote control.

COVERAGE: The monograph is a collection of papers presented at the  
All-Union conference called by the Institute of Automation and

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Remote Control in the National Economy (Cont.)

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Remote Control of the USSR Academy of Sciences on November 29, 1954. The articles deal with theoretical problems of remote control and various problems of research. They discuss the development of new methods in telemetering and review the present state of the research, development, and manufacture of remote control equipment. Problems concerning remote control communication channels and the general theory of telemetering devices and controls are treated very briefly, while problems in the manufacture of remote control apparatus are not included. The articles were discussed at the conference and the results of these discussions are also presented. For references see Table of Contents.

TABLE OF CONTENTS:

Foreword

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PART 1. GENERAL PROBLEMS OF REMOTE CONTROL

M.A. Gavrilov, Doctor of Technical Sciences. Present State and Basic Problems of Research in the Field of Remote Control

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- ▼ The article discusses a theory of signal shaping which includes methods of combining pulses and determining the correlation between the number of signals and pulses needed for signal shaping. It deals with problems of obtaining binary numbers tables in which the change of 0 into 1 or vice versa would give the binary number missing in the table. Methods of obtaining a table of nonchanging signals are also given. It is stated that the analysis of stability of remote control signals conducted by the Institute of Automation and Remote Control of the USSR Academy of Sciences is still in the initial stage of development and is chiefly limited to the investigation of relay-contact stability. There is a brief discussion of the construction and transformation of relay systems, methods of constructing ganged units for pulse generation, control, starting, and stopping, and protection, and the possibilities of employing contactless elements. It is indicated that, in general, the development of remote control systems in the USSR is still in the initial stage. There are 9 references, of which 6 are Soviet and 3 English.

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V.A. Il'in. Basic Problems of Scientific Research. Work : 51  
in the Field of Telemetering

The article discusses in general terms problems of the reliability and efficiency of telemetering, as well as possible methods of improvement. There are 8 references, of which 7 are Soviet and 1 English.

B.S. Sotskov. Reliability of the Operation of Relay Element 59  
Contacts

The author derives equations for contact wear under different operating conditions, the limiting value of current in the circuit, and the actual contact area and pressure. There is a brief discussion of the relationship between contact wear and reliability of relay operation. There is 1 Soviet reference.

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A.M. Petrovskiy. Some Possibilities of Applying the Intelligence Theory to Remote Control 71

The article discusses general aspects of the transmission of coded intelligence, as well as the possibilities of employing coding technique in the field of remote control. There are 5 Soviet references (including 1 translation).

V.N. Chepurin. Manufacture of Remote Control Apparatus by the Elektropul't Plant 77

The author states that during the five-year period, 1951-1956, the Elektropul't Plant developed over 70 types of apparatus for remote control measurements, telesignalling, and for use in control rooms. It is stated that the measuring instruments for short-distance operation can transmit measurements for 17-20 kilometers. Their accuracy is about  $\pm 1.5-2\%$ . Since January, 1954, the plant has been manufacturing units with compensating

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transformers which make it possible to measure up to 10 similar parameters with a single receiving unit. The error of this unit is not greater than  $\pm 3\%$ . At the end of 1951 the Orgres-Electropul't Frequency System began manufacturing the narrow-band TChO-3 frequency instrument for transmitting measurements. The TChO-3 instrument operates on 13 different frequencies in the range of 340-3150 cycles. It makes possible the transmission of measurements for practically any distance. The expected error of this instrument is about  $\pm 2.5\%$ , but the practical error does not exceed  $\pm 2\%$ . It is stated that the PMS and PDChS type two-scale receiving devices were replaced by the PMDG and PDDG type single-scale instruments. The PMDG type has an error of  $\pm 0.75\%$ . The circuit of the self-compensating frequency meter of the PPCh type was also improved. The author also lists various devices of the VRT-53 type time-distributing system used for telesignalling. There is a discussion of a remote control and telesignalling unit-type device for the UTB-55 time-distributing system and the VUST-1 and VUST-2 rectifiers with stabilizing circuits. A short description is given of control room equipment, such as memory

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devices and dispatchers' supervision boards of the ShchD-1 and ShchD-2 types. There are no references.

Ya. I. Bykhovskiy. Modern High-frequency Channels Using Electric Transmission Lines.

85

The article presents a general discussion of problems encountered in the transmission of signals. Such factors as weather conditions, faults, and interference and their effect on the efficiency of high-frequency transmission are described. A list, (with specifications), of various apparatus used for high-frequency transmission and reception is given on p.87. Their operation and structural diagrams are discussed. There are no references.

PART 2. REMOTE CONTROL

M.A. Gavrilov, Doctor of Technical Science. State of the Theory of Relay Circuits

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813

The article discusses the fundamentals of relay circuit theory and gives some examples to illustrate its possible application in the construction of blocks of remote control devices. Problems of synthesis, analysis, and transformation of relay circuits are discussed. There are 5 Soviet references.

G.N. Povarov. Present State of the Problem Concerning the Minimum Number of Structural Components in Relay Switching Circuits

134

The article discusses the problem of evaluating relay circuits by taking into consideration the number of contacts present in a circuit. There are 11 references, of which 6 are Soviet, 3 English, 1 French, and 1 Dutch.

V.N. Roginskiy. Relay Counting Circuits

139

A general discussion of circuits for counting current current pulses is presented. Steps involved in the design of

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relay counting circuits are briefly described. There are 5 Soviet references.

V.I. Ivanov. Investigation of Relay Switching Circuits 146

The article discusses switching circuits with blocking and cutoff relays and the design of relay switching circuits. There are 3 Soviet references.

V.A. Zhozhikashvili and K.G. Mityushkin. Application of Hysteresis Magnetic Elements for the Shaping and Reception of Remote Control Signals 159

The article briefly describes the operation of circuits based on the principle of the rectangular hysteresis loop of their magnetic components, such circuits being used for shaping amplitude signals and for stretching the intervals between pulses. There is also a short discussion of circuits for pulse reception.

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There is 1 Soviet reference.

V.N. Tutevich. Remote Control Multichannel Pulse System  
Using Magnetic Elements with Rectangular Hysteresis Loop 163

The article discusses the general aspects and principles of operation of a three-channel, remote control system using magnetic elements and describes the system's protection against possible disturbances. There are 5 Soviet references.

O.A. Goryainov. Principles of Constructing Remote Control  
Devices Using Cold-Cathode Thyratrons 172

The article presents a general description of the operation of a cold-cathode thyatron. An analysis is made of a remote control system which the author developed together with I.A. Nabiyeu. There is a discussion of various elementary

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circuits making up the system, such as repeaters, pulse generators, and monostable and bistable trigger circuits. There are no references.

R.L. Raynes. TsNIEL Remote Control Devices in Power Systems

189

A. brief description is given of the operation and construction of telesignalling apparatus developed by TsNIEL-Tsentral'naya nauchno-issledovatel'skaya elektrotekhnicheskaya laboratoriya Ministerstva elektrostantsiy -TsNIEL (Central Scientific-Research Electrical Engineering Laboratory of the Ministry of Power Stations). A general discussion of a recently developed magnetic contactless frequency divider used as a pulse generator is presented. There are no references.

S.M. Yakovlev. Problems of Constructing Devices for Remote Control of Distributed Objects

203

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The article reviews problems encountered in the development and construction of systems for the remote control of distributed objects and discusses a system using relay switching circuits. There are 9 references, of which 3 are Soviet, 4 German, and 2 English.

A.V. Ivanov. Remote Control of Railway Substations of Electrified Railroads

210

The article presents a general discussion of control room equipment. It also describes a remote control system developed by TsNII MPS-Tsentral'nyy nauchno-issledovatel'skiy institut Ministerstva putey soobshcheniya (Central Scientific Research Institute of the Ministry of Railroads) and used by the Moscow railroad center. The operation of system components, such as the coding circuit, start-up circuit, and signal reception and transmission circuits, is described. There are no references.

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V.A. Moroz. Devices for the Remote Control of Public Service Systems

223

The article presents a general discussion of devices used for the remote control of public service systems and provides a classification of devices according to their use. It briefly describes a remote control device used for transmitting a small number of signals. There are no references.

A.S. Al'tshuller. Remote Control of Mercury-Arc Rectifier Substations for Electrolytic Plants

229

The article discusses two types of remote control devices developed by the author, the one having a large and the other a small number of signal transmitting channels. The article describes their principle of operation and shows their circuits for transmitting, receiving, and shaping of signals. There is 1 Soviet reference.

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PART 3. TELEMETERING

V.S. Malov. Selection of Basic Characteristics of Remote Control Equipment for Power Systems

243

The article presents a general discussion of problems encountered in the development and application of remote control equipment and systems. The importance of remote control is stressed and suggestions for the further development of remote control theory are offered.

V.D. Ambrosovich. Newly Developed Telemetering Equipment of the Elektropul't Plant

249

The author discusses new remote control equipment developed by the Elektropul't Plant and the Central Scientific-Research Electrical Engineering Laboratory of the Ministry of Electric Power Stations, which are being used by the Kuybyshev and

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and Stalingrad Hydroelectric Power Stations. Circuits of various remote control transmitting instruments are given and their operation discussed. Photographs of a transmitter with astatic characteristics are shown on p. 259. There is a description of measuring instruments such as the VAPI-1a, VRPI-1a, 2VAPI-1a, and 2VRPI-1a wattmeters and the VPI-1a voltmeter. Specifications of the VAPI-1a wattmeter and VPI-1 voltmeter are tabulated. The article briefly describes the PMDG-1 moving-coil ammeter and the PLDG-1 ratiometer and gives their specifications. There are no references.

S.A. Ginzburg. Methods of Designing Power Rectifiers

264

The article discusses the theory of a square-law function generator with unsymmetrical nonlinear elements. It also describes the theory and application of MDM-1, MDM-1T, MDM-2 magnetic rectifiers using square-law function generators with a single nonlinear ferromagnetic element. The instruments were developed

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by the author at TsLEM-Tsentral'naya laboratoriya elektricheskikh i izmeritel'nykh priborov i eksperimental'naya masterskaya (Central Laboratory and Experimental Workshop of Electrical and Measuring Instruments). The accuracy and specifications of the instruments are given. There are 5 Soviet references.

V.Ye. Kazanskiy. Long-range Telemetering

277

The article describes the Orgres-Gosudarstvennyy trest po organizatsii i ratsionalizatsii elektrostantsiy (State Trust for the Organization and Efficiency of Electric Power Stations) equipment of the TCh0-53 type used for telemetering of frequency and power of electric power systems. The article also describes the operation of an RKP type signal recorder and various other components of the TCh0-53 system for long-range telemetering. The advantages of the TCh0-53 type of telemetering equipment over the TCh0-3 type are discussed. There are no references.

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V.P. Demeshin. Frequency Converter With a Nonlinear Control Element

282

The author describes simple converters in which the frequency is controlled by means of nonlinear elements. He discusses transients in RC-oscillators with nonlinear resistances and capacitances and derives expressions for these transients. A discussion of the behavior of thyrites and their use in the phase-shifting circuits of frequency converters is presented. There are 4 Soviet references.

A.M. Pshenichnikov. Telemetering and Recording Instruments With Magnetic Modulators Used as Null Mechanisms

293

The author describes the construction and operation of a magnetic modulator with four circular molybdenum permalloy cores. He also describes a system used by him to determine the magnetic effect of the second harmonic in the null mechanism. The

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circuits of the following equipment are described: the "Gigant" device used for frequency, power, and voltage measurements; a class 0.2 recording frequency meter; a recording receiver and transmitter for remote control frequency systems; and an amplifier for the summing circuits of frequency-and-pulse systems. The above devices were developed by TsLEM-Tsentral'naya laboratoriya elektricheskikh i izmeritel'nykh priborov i eksperimental'naya master'skaya (Central Laboratory and Experimental Workshop of Electrical and Measuring Instruments). There are 2 Soviet references.

V.A. Kashirin, I.A. Kostetskaya, and N.V. Pozin. Remote Control Phase Meter

310

The article discusses a phase meter developed by V.A. Il'in, Doctor of Technical Sciences, of the Institute of Automation and Remote Control, USSR Academy of Sciences. Circuits of

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transmitting and receiving mechanisms of the phase meter are given and a discussion of their operation is presented. There are no references.

R.V. Bilik. Remote Control Measuring Equipment of a Pulse-Time System

315

The article briefly describes the construction and operation of remote control transmitters. It discusses and provides photographs of transmitters for cyclic remote control measurement built into the housing of a DP-280 type flowmeter, a TG-270 pressure thermometer, and a pressure gage. It also presents a brief description of a unit-type, three-component transmitter which can measure the flow, pressure, and temperature of a gas. The construction and operation of an anchor-type remote control receiver of a pulse-time system is described and a general view given. A discussion of the operation of relay transmitting and

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receiving circuits for cyclic remote control measurement is presented. There are no references.

I.I. Mikhaylov. Electronic Pulse Power Adder With Self-Oscillating System

327

The article describes the operation and construction of self-oscillating circuits such as relaxation oscillators using gas- and electron tubes. The circuit of a pulse power adder is presented and the behavior of its various components is briefly discussed. There are 3 Soviet references.

V.N. Mikhaylovskiy. Telemetering of Depth Parameters

334

The author discusses the depth parameters which determine the operating conditions and technique of drilling bore-holes for oil, underground gasification of coal, and geophysical

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explorations and describes various signal transmission channels. A general discussion on the construction and application of the proper equipment for remote control of depth parameters is presented. There are no references.

A.L. Abrukin. Pulse-Time Converter for Telemetering 346

The circuit of a pulse-time converter with negative feedback is given and its operation described. Amplification expressions are derived and the advantages and disadvantages of the converter are discussed. There are 2 Soviet references.

PART 4. TELEMECHANIZATION 353

Ye. D. Zeylidzon. New Problems in the Field of Telemechanization of Power Systems 355

The article gives an account of Soviet achievements in the introduction of remote control apparatus to industry. By the

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end of 1955, control rooms equipped with telemetering and telesignalling instruments controlled about 20 power systems representing about 50% of the total power of all systems of MES-Ministerstvo elektrostansiy (Ministry of Electric Power Stations). About 90% of the total length of 35-kv transmission lines was equipped with automatic reclosing apparatus. By the end of 1954, over 40 hydroelectric power stations, representing about 60% of the total power generated by the hydroelectric power stations of MES, were using remote control equipment. The article presents a general discussion of the development and more extensive use of remote control equipment in industry. There are no references.

N.F. Penkin. Dispatching Centralization in Railroad Transport 362

A general discussion of the development of centralized dispatching systems is given. The article briefly discusses systems of the DVK-1 type with series-connected relays and the

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DVK-2 and DVK-3 types with parallel-connected relays, their operation and code shaping. It describes a centralized dispatching system developed by the Tsentral'nyy nauchno-issledovatel'skiy institut Ministerstva putey soobshcheniya (Central Scientific-Research Institute of the Ministry of Railroads). The system makes use of the polarity and frequency characteristics of pulses, the control codes being transmitted at 1650, 1950, 2250, and 2550 cycles. There is 1 Soviet reference.

L.B. Kublanovskiy. Problems in Telemechanization of Oil Fields 372

The author briefly describes the various methods and control systems used in the extraction of oil. He describes a new remote control relay system developed by the Vsesoyuznyy nauchno-issledovatel'skiy institut Ministerstva neftyanoy promyshlennosti (All-Union Scientific-Research Institute of the Ministry of the Oil Industry). The system was tested at one of the Baku oil fields

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and will be recommended for wide use. It is stated that in spite of the high degree of mechanization of oil fields, automation and remote control are still only scarcely used. There are no references.

V.T. Sergovantsev. Telemechanization of Rural Power Systems 382

The author discusses in general terms the telemechanization of rural power systems and reviews five different methods of communication between dispatching stations and control points. He describes an experiment conducted with a system having a single dispatching station common to all control points. There are no references.

Ye.S. Snagovskiy. Basic Requirements of Remote Control Devices Used in Coal Mines 391

The article contains schematic diagrams of the

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the location of surface, as well as underground, dispatching and control points and discusses methods of control. Basic methods for controlling the amount of coal mined and delivered to the surface are described in general terms. There is a general discussion of the function of remote control equipment on the surface and the requirements of transmitters and receivers of remote control systems used in coal mines. There are no references.

A.S. Ilyakhinskiy. Telemechanization of Power Installations of Metallurgical Plants

403

The author states that the Moscovskoye proyektro-eksperimental'-noye otdeleniye Tyazhpromelektroprzemly (Moscow Project and Experimental Division of the State Design and Planning Institute for the Heavy Electrical Industry) completed a project for the remote control of electric power, gas, and water distribution of one of the largest metallurgical plants (not identified).

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He discusses basic problems in the remote control of power installations of the above-mentioned plant and suggests the most expedient methods of solving them. The article contains diagrams of systems for the remote control of power, gas, and water distribution and a general description of the operation of systems. It discusses the proper selection of remote control systems and describes the operation of two types  $[(n+4)$  and  $2n+1]$  of multichannel systems for remote control and telesignalling. There are 4 Soviet references (including 1 translation).

M.I. Karlinskaya. Telemechanization of Municipal Service Systems

425

The author discusses centralized control of municipal street-car traffic, water distribution, and street lighting and indicates the possible savings when employing remote control systems. A general discussion of the requirements of remote

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control and telesignalling systems developed by the USSR Academy of Municipal Economy is presented. There are no references.

Yu.S. Tsitkin. Tasks in the Telemechanization of Dispatcher Control of Gas Mains

433

The article states that modern remote control systems for gas mains hardly exist in the USSR. The author suggests an improvement of the present situation and presents schematic diagrams of proposed systems for central and regional dispatching stations for gas mains. There are no references.

L.A. Emdin. Telemechanization of the Municipal Gas Service

438

The article presents various methods of municipal gas distribution and describes the operation of remote control dispatching stations. It discusses a telemetering code-impulse system developed for use in Leningrad and describes the

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operation of the transmitter, receiver, and relay-type converter circuits of the system. There are no references.

Yu. G. Kornilov. Problems of Introducing Dispatching Stations  
in Gas Systems of Large Cities 457

The article discusses a remote control system developed by the Gas Institute of UkSSR Academy of Sciences. An elementary diagram of this system, used for measuring inlet and outlet gas pressures and gas flow, is given together with a description of its operation and that of its individual components. The article also describes the operation of a two-pulse pneumatic controller of gas pressure. There are 2 Soviet references.

PART 5. DISCUSSION

Problems in Remote Control 467

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In the discussion of papers on remote control presented at the conference the following persons are mentioned as having taken part: Ye. A. Kaminskiy of the Moskovskiy metropoliten (Moscow Subway System); Ye. P. Kondrat'yev of the "Ukrgiprovdokhoz," Kiyev; A.N. Yurasov of the Vsesoyuznyy zaachnyy politekhnicheskii institut (All-Union Correspondence Polytechnic Institute); V.F. Merzlov of the Moscow Subway System; F.A. Katkov of the Kiyevskiy politekhnicheskii institut (Kiyev Polytechnic Institute); A.S. Al'tshuller of the Leningradskoye otdeleniye "Tyazhpromelektroproyekta" (Leningrad Branch of "Tyazhpromelektroproyekta"); A.S. Ilyakhinskiy of the Moskovskoye otdeleniye "Tyazhpromelektroproyekta" (Moscow Branch); V.A. Smidovich of "Donbassenergo", Gorlovka; G.N. Povarov of the IAT AS USSR; V.F. Ronzhin of "Teploelektroproyekta"; N.M. Krasnikova of the GIDEP, Moscow; V.A. Borisov of the Ivanovskiy energeticheskii institut (Ivanovo Power Institute); R.I. Yurgenson of the Leningradskiy elektrotekhnicheskii institut im. Ul'yanova-Lenina (Leningrad Electrical

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Engineering Institute imeni Ul'yanov-Lenin); R.L. Raynes of TsNIEL MES; B.F. Semkov of the AS USSR; S.V. Krivonosov of NII, Leningrad.

The discussion stressed the importance of coordination of research among the various organizations and the need for trained personnel. The necessity of standardizing manufactured equipment and improving its quality was also indicated.

Problems in Telemetering

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The following persons participated in the discussion of papers on telemetering presented at the conference: S.A. Ginzburg of TsLEM MES; Yu.S. Tsitkin of "Ukrgiprogaz"; A.A. Levin of Orgres; L.D. Sterlinson of Orgres; I.I. Mikhaylov of ODY Yuga (South); V.Ye. Kazanskiy of Orgres; A.L. Abrukin of VNII MNP; Ye.D. Zeylidzon of the Tekhnicheskoye upravleniye MES (Technical Administration of the MES); V.A. Il'in of IAT AS USSR;

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V.S. Malov of TsNIEL MES.

The discussion stressed the need for manufacturing standard remote control devices and criticized existing equipment for its poor reliability. It was suggested that the Institute of Automation and Remote Control of the USSR Academy of Sciences should become the authority for the research, development, and application of remote control apparatus. The need for a separate periodical which would publish the materials on remote control was stressed.

General Problems in Telemechanics

474

The following persons took part in the discussion on general problems in telemechanics: V.M. Kharlamov of Glavenergo; S.P. Kravivskiy of the Ministerstvo elektrostantsiy SSSR (Ministry of USSR Electric Power Stations); L.A. Emdin of the "Lengorinzhproyekt", and B.S. Sotskov of IAT AS USSR.

Card 31/32

Remote Control in the National Economy (Cont.) 813

A general discussion of the savings to be made by introducing remote control in industry is presented. It is stated that in spite of certain achievements in the manufacture of remote control equipment, there is room for much improvement as the equipment is still considered to be experimental and requires prolonged testing.

Decisions of the Conference

477

The conference decided that telemechanics should find more extensive application in the Soviet national economy. The need for remote control exists especially in the oil, coal, metallurgical, and chemical industries. Attention should be given to the development of power rectifiers and to methods of synthesizing and analyzing remote control devices. Training of personnel should be improved so that the students of electrical engineering and polytechnic institutes could specialize in telemechanics.

AVAILABLE: Library of Congress

Card 32/32

JP/ksv  
12/5/58

ZHOZHAKASHVILI, V. A.

ZHOZHAKASHVILI, V. A.

"The Use of Magnetic Elements With Rectangular Hysteresis Loops in Automation and Telemechanics Devices," pp 127-133, ill, ref

Abst: The author considers the use of magnetic elements with rectangular hysteresis loops as scalars and storage units in various automation and telemechanics devices.

SOURCE: Sbornik Rabot po Avtomatike i Telemekhanike. In-t Avtomatike i Telemekhaniki AN SSSR (Collection of Works in Automatics and Telemechanics. Institute of Automatics and Telemechanics of the Academy of Sciences USSR), Moscow, Publishing House of the Academy of Sciences USSR, 1956

Sum 1854

ZHOZHAKASHVILI, V. A.

and

MITYUSHKIN, K. G.,

"The Application of Contactless Magnetic Elements in Remote Control Devices," pp 29-48, ill, 2 ref (1957)

Abst: The properties of contactless magnetic elements are considered and the advantages of their application in remote control devices are noted. The results of the experimental operation of the first unit (TCh-TS) have shown that the use of such elements has significantly improved the basic technical and operational characteristics of TCH-TS devices (reliability of operation, transmission speed, and the elimination of maintenance equipment). Wide introduction of contactless elements in telemechanics practice is recommended.

SOURCE: Materialy Nauchno-Tekhnicheskoy Konferentsii po Obmenu Opytom Eksploatatsii Ustroystv Telemekhaniki i Svyazi Nauchno-Tekhn. Ova Energet. Prom-sti. Material from the Scientific and Technical Conference on Exchange of Experience in the Operation of Telemechanics and Communications Devices of the Scientific and Technical Society of the Power Engineering Industry), Rostov, 1957

Sum 1854

ZHOZHIKASHVILI, V. A.

AUTHORS: Zhzhikashvili, V. A., Mityushkin, K. G. (Moscow) 103-1-6/10

TITLE : Relay Phenomena in Circuits Including Magnetic Cores With a Square Hysteresis Loop (Releynyye yavleniya v kol'tsevykh skhemakh, soderzhashchikh magnitnyye serdechniki s pryamougol'noy petley gisterezisa)

PERIODICAL: Avtomatika i Telemekhanika, 1958, Vol. 19, Nr 1, pp. 64-74 (USSR)

ABSTRACT: In this paper relay phenomena are described, which occur in schemes with magnetic cores (with a square hysteresis loop) and a positive feedback. The static characteristics and the character of transition processes caused by a single and by repeated excitation or by the effects of pulse disturbances are subjected to analysis. It is shown, that annular-schemes with magnetic cores show many stable states, generally speaking, and that the transition of the scheme from one stable state to another takes place at definitive values of voltage and current by an avalanche-like process. This effect is caused by the amplifying effect of the cores and the existence of a positive feedback. It is shown, that the stable states, which correspond to the domain II ( $U_V < U_{\sim} < U_{V2}$ ) ( $U_{\sim}$  denoting

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Relay Phenomena in Circuits Including Magnetic Cores With a Square Hysteresis Loop

103-1-6/10

the initial voltage) and  $I$ , ( $U_{\text{detention}} < U_{\sim} < U_{V1}$ ) ( $U_{\text{detention}}$  denoting the voltage, at which the scheme passes from the excited to the not excited state,  $U_{V1}$  and  $U_{V2}$  denoting the voltages in the feeding circuit corresponding to the transition into the first and the second excited state respectively) may be used in the case, when it is desired to obtain commutating computing appliances which operate with a foreign excitation (domain I) and with self-excitation (domain II).- It is shown, that a ring-scheme consisting of ideal cores ( $H_{\text{core}} = 0$ ) is incapable from principal considerations to remain in a not excited state on the condition  $k_{\sim} > 1$ , because an arbitrarily small excitation will conduct the scheme into an excited state.  $k_{\sim}$  denotes the coefficient of transmission, (amplification)<sup>w</sup> of the flux. If this value is greater than one, the quantity of flux modification and the value of pick-up time lag in every subsequent half-period increase, if it is less than one, these two values decrease. It is further shown, that a scheme consisting of real cores ( $H_{\text{core}} \neq 0$ ) can be drawn from the

Card 2/3

Relay Phenomena in Circuits Including Magnetic Cores With a  
Square Hysteresis Loop

103-1-6/10

not excited state on the condition, that the exciting effect of the signal or of the disturbance causes a magnetisation, which exceeds a certain threshold value  $\Delta B_{\min}$ .  $\Delta B_{\min}$  denoting the minimum modification of the induction on a response of the core. There are 11 figures, and 1 reference, 1 of which is Slavic.

SUBMITTED: March 11, 1957

AVAILABLE: Library of Congress

1. Electric relays-Analysis 2. Electrical equipment-USSR

Card 3/3

~~Zhozhikashvili, V.A.~~  
ZHOZHIKASHVILI, V.A.; MITYUSHKIN, K.G. (Moskva).

Relay phenomena in ring circuits containing magnetic cores with  
square hysteresis loops [with summary in English]. Avtom. i telem.  
19 no.1:64-74 Ja '58. (MIRA 11:1)

(Electric relays)

ZHRISANFOVA, A. I.

23307 Primeneniye Metoda Permanganatnykh Chisel Dlya Opredeleniya Stepeni Okisleniya Ugley. Izvestiya Akad. Nauk SSSR, Otd-Niye. Tekh. Nauk, 1949, No. 7, c. 1116-21.- Bibliogr: 10 Nazv.

SO: LETOPIS' NO. 31, 1949

ACC NR: AP6036905

(N)

SOURCE CODE: UR/0226/66/000/011/0077/0084

AUTHOR: Manelis, R. M.; Meyerson, G. A.; Zhuravlev, N. N.; Telyukova, T. M.;  
Stepanova, A. A.; Gramm, N. V.

ORG: Moscow Institute of Steel and Alloys (Moskovskiy institut stali i splavov)

TITLE: Some specific features of the synthesis of yttrium and gadolinium borides  
and some of the boride properties

SOURCE: Poroshkovaya metallurgiya, no. 11, 1966, 77-84

TOPIC TAGS: yttrium boride, gadolinium boride, chemical synthesis, boride, yttrium,  
gadolinium, porosity, hardness, bending strength

ABSTRACT: Yttrium and gadolinium borides were synthesized from respective oxides  
with amorphous boron at 1400—2000C in a vacuum of  $2-5 \cdot 10^{-5}$  mm Hg. The reaction  
 $MeO + 2B \rightarrow MeB + BO$  yielded  $YB_4$ ,  $YB_6$  and  $YB_{12}$  yttrium borides and  $GdB_4$  and  $GdB_6$   
gadolinium borides. Single-phase  $YB_6$  and  $YdB_6$  hexaborides were obtained at 1700C;  
at higher temperature they decomposed into tetraborides and boron. Single-phase  $YB_{12}$   
compound was obtained at 1600—1700; at higher temperatures it decomposed into  
 $YB_{602}$   $YB_4$  compounds. Yttrium and gadolinium boride powders were then compacted,  
sintered in vacuum, and tested. The porosity of yttrium-boride specimens was  
22—26%, and that of gadolinium-boride specimens was 30—32%. The microhardness and  
bend strength of  $YB_4$ ,  $YB_6$ , and  $YB_{12}$  was 2850 dan/ $mm^2$ , and 290 dan/ $cm^2$ , 2575 dan/ $mm^2$ ,  
and 270 dan/ $cm^2$ , and 2500 dan/ $mm^2$ , and 165 dan/ $cm^2$ , respectively. The microhardness

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ACC NR: AP6036905

and bend strength of  $GdB_4$  and  $GdB_6$  was 1900 dan/mm<sup>2</sup> and 675 dan/mm<sup>2</sup> and 1850 dan/mm<sup>2</sup> and 320 dan/cm<sup>2</sup>, respectively. The boride contained almost no impurities. The most oxidation resistant were gadolinium borides and, among yttrium borides, the  $YB_{12}$  compounds. Orig. art. has: 5 figures and 6 tables.

SUB CODE: 13, 11/ SUBM DATE: 12Apr66/ ORIG REF: 008/ OTH REF: 003/

Card 2/2

ROZHDESTVENSKIY, B.A., general-leutenant zapasa; RUBLEV, S.T., general-mayor v otstavke; SIMVOLOKOV, V.N., general-mayor v otstavke; ZHRAVLEV, P.M., general-mayor v otstavke; SYCHEV, K.V., general-mayor, red.; MALAKHOV, M.M., polkovnik, red.; GNEDOVETS, P.P., polkovnik zapasa, red.; ZUDINA, M.P., tekhn. red.

[Attack in a wooded-swampy and in a wooded-mountainous locality; collection of tactical examples of the attack of a rifle unit in the Great Patriotic War in 1944] Nastuplenie v lesisto-bolotistoi i gorno-lesistoi mestnosti; sbornik takticheskikh primerov nastupleniya voisk strelkovogo korpusa po opytu Velikoi Otechestvennoi voyny v 1944 g. Moskva, Voen. izd-vo M-va oborony SSSR, 1961. 203 p. \_\_\_\_ [Album of diagrams] Al'bom skhem. 14 diagrams. (MIRA 15:2)  
(Attack and defence (Military science))

ZHRUBA, Quico

- [illegible]



LABORI, A. [Laborit, A.]; KINLIN, Zh.; RISHAR, S.; NIOSSA, R.; ZHUANI, Zh.M.;  
MARTIN, Zh.; VEBER, V.; GYUYO, Zh.; BARNON, S.

Experimental bases for artificial cardiac arrest and artificial  
exclusion of brain activity. Trudy 1-go MMI 11:158-172 '61.

(MIRA 15:5)

1. Laboratoriya fiziologii tekhnicheskoy sekti voyennogo vedomstva  
i nauchnyy tsentr izucheniya cheloveka, Frantsiya.  
(HEART FAILURE) (BRAIN)

ACC. NR: AP6028894

(A,N)

SOURCE CODE: UR/0325/66/000/003/0050/0055

AUTHOR: Lobachev, V. S.; Besedin, B. D.; Zhubanazarov, I. Zh.

ORG: none

TITLE: Some methods of suppressing rodent mobility and long-term poisoning of their settlement areas

SOURCE: Nauchnyye doklady vysshey shkoly. Biologicheskiye nauki, no. 3, 1966, 50-55

TOPIC TAGS: disease vector, rodent, rodent control, pest control, gerbil,

PESTICIDE

ABSTRACT: Zinc phosphide ( $Zn_3P_2$ ) is one of the most commonly used rodent POISONS. Usually, 15-30 g of a bait composed of wheat, oats, 8-20% zinc phosphide and 3-5% oil (percentages by weight) are used to poison one burrow colony. However, this method often produces neither highly effective results nor long-lasting action. Suppression of plague and plague-bearing animals has long been a problem in the Northern Aral region. Since 1958, the Aral Sea Antiplague Station, Moscow University, and the Central Asian Antiplague Institute have made experimental studies of pest extermination in the Aral Kara-Kum. The epizootic cycle must be disrupted for 3-4 yr for effective

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ACC NR: AP6028894

extermination in a plague focus; suppressing the rodent population for 3—5 yr will accomplish this. The authors doubled the poison dose 3—4 times (50—150 g per colony) for long-term suppression of small mammals in epizootic areas and areas with large animal populations. This method had previously been used successfully for mice; it had not, however, been used for larger gerbils. It was found that small piles of wheat treated with zinc phosphide were well preserved and retained toxicity well under a variety of circumstances. In autumn of 1961, an area first treated in 1959 was treated with increased doses of poison (150 g of a wheat-oats-15% zinc phosphide mixture). Similar control areas were treated with the usual dosage (20—30 g). Table 1 clearly shows the greater effectiveness of the increased dose. It has been established that gerbil mortality is directly proportional to the amount of bait and zinc phosphide concentration. However, dosages did not generally exceed 20 g per burrow colony. The authors' experiments in the Northern Aral territory showed such doses (20—30 g) to be unsatisfactory; however, it is pointed out that such increased doses are not always necessary: in places where the bait is quickly covered by sand, where preservative conditions are good, and where no previous treatment has been applied. Good results were obtained from the introduction of bait in a variety of packagings into the gerbil burrows and storage rooms. Radioisotopes were used to

Card 2/3

ACC NR: AP6028894

study the movement of gerbils and their ectoparasitic fleas after extermination, and their most common migratory patterns are mentioned. Lethal areas for rodents are most effective:

- 1) on their main migration routes (railroads and dirt roads;
- 2) in potentially epizootic areas, as determined by bacteriological, serological, and ecological methods; 3) in areas with concentrations of rodents, or where rodents have extensive contact with other animal carriers. The authors are particularly interested in methods of scattering poison in rodent burrows and storage areas; these require simple equipment, and act on both rodents and their ectoparasites.

[WA-50; CBE No. 12]

SUB CODE: 06/ SUBM DATE: 26Mar65/ ORIG REF: 011/

Card 3/3

ACC NR: AP6028894

(A,N)

SOURCE CODE: UR/0325/66/000/003/0050/0055

AUTHOR: Lobachev, V. S.; Besedin, B. D.; Zhubanazarov, I. Zh.

ORG: none

TITLE: Some methods of suppressing rodent mobility and long-term poisoning of their settlement areas

SOURCE: Nauchnyye doklady vysshey shkoly. Biologicheskiye nauki, no. 3, 1966, 50-55

TOPIC TAGS: disease vector, rodent, rodent control, pest control, gerbil,

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ABSTRACT: Zinc phosphide ( $Zn_3P_2$ ) is one of the most commonly used rodent POISONS. Usually, 15-30 g of a bait composed of wheat, oats, 8-20% zinc phosphide and 3-5% oil (percentages by weight) are used to poison one burrow colony. However, this method often produces neither highly effective results nor long-lasting action. Suppression of plague and plague-bearing animals has long been a problem in the Northern Aral region. Since 1958, the Aral Sea Antiplague Station, Moscow University, and the Central Asian Antiplague Institute have made experimental studies of pest extermination in the Aral Kara-Kum. The epizootic cycle must be disrupted for 3-4 yr for effective

Card 1/3

ACC NR: AP6028894

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Card 2/3

ACC NR: AP6028894

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[WA-50; CBE No. 12]

SUB CODE: 06/ SUBM DATE: 26Mar65/ ORIG REF: 011/

Card 3/3..

~~Z HUBRANSKAYA, VAVSHCHAK~~

POLAND/Chemical Technology - Cellulose and Its Derivatives.  
Paper.

H.

Abs Jour : Ref Zhur - Khimiya, No 16, 1958, 56085

Author : Zhubranskaya, Vavshchak

Inst :

Title : An Experimental Distillation of Tallol.

Orig Pub : Przegl. papier., 1957, 13, No 12, 378, 3-4.

Abstract : The research laboratory of the Paper and Cellulose Institute (Polish People's Republic) studying waste products in cellulose production, demonstrated that the tallol distillation with a complete separation into fatty and tar acids can be accomplished with existing equipment. The tar acids and pitch obtained might be used in the preparation of glues in paper sizing. The pitch, due to its darker color, is used in sizing of bag paper, and other dark-colored papers.

Card 1/1

43



ZHUBANOV, B. A.

ZHUBANOV, B. A.: "Polycondensation of aryl dichlorophosphines with 1,2-diphenyl ethane in the presence of aluminum chloride". Moscow, 1955. Min Higher Education USSR. Moscow Order of Lenin Chemicotechnological Inst imeni D. I. Mendeleyev. (Dissertations for the Degree of Candidate of Technical Sciences)

SO: Knizhnaya letopis', No. 52, 24 December, 1955. Moscow.

62-58-5-14/27

AUTHORS: Korshak, V. V., Kolesnikov, G. S., Zhubanov, B. A.

TITLE: Phosphor-Organic Polymers (Fosfororganicheskiye polimery)  
Communication 3: Polycondensation of p-Chlorophenyldichloro-  
phosphines With 1,2-Diphenylethane (Soobshcheniye 3. Poli-  
kondensatsiya p-khlorfenildikhlorfosfina s 1,2-difeniletanom)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Khimicheskikh Nauk,  
1958, Nr 5, pp. 618 - 625 (USSR)

ABSTRACT: The phosphorous highly-molecular compounds in which phosphorus  
inserts in the basic-chain of the polymer and in which phos-  
phorus is immediately combined with the hydrocarbon-atoms, have  
been very little investigated up till now. In the respective  
publication only the products of copolymerization of unsaturated  
compounds with dichlorophosphines in which the main chain con-  
sists of carbon atoms and phosphorus atoms, are given. A series  
of experiments in which the molar correlation of the initial  
substances was 1:1, was carried out for the purpose of clearing  
the influence of the concentration of the catalyst on the

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Phosphor-Organic Polymers. Communication 3: Poly-  
condensation of p-Chlorophenyldichlorophosphines With 1,2-Diphenylethane

62-58-5-14/27

process of polycondensation of p-chlorophenyldichlorophosphine with diphenylethane. The essential rules governing the polycondensation process were determined with the investigation of the polycondensation of the p-chlorophenyldichlorophosphine with 1,2-diphenylethane in the presence of aluminum chloride. The substitution of a hydrogen-atom in benzene by a phosphorous radical with simultaneous formation of a phosphorus-carbon bond leads to the deactivation of the remaining hydrogen-atoms in the benzene-ring. It was found that the polycondensation of p-chlorophenyldichlorophosphine with diphenylethane is complicated by processes which take place according to the way of reaction of superarylation. There are 5 tables and 16 references, 13 of which are Soviet.

ASSOCIATION:

SUBMITTED:

Institut elementoorganicheskikh soedineniy Akademii nauk SSSR  
(Institute for Elemental-organic Compounds AS USSR)  
November 12, 1956

Card 2/2

1. Phosphorous compounds (Organic)--Analysis
2. Diphenylethane
- Condensation reactions
3. Phosphines--Condensation reactions
4. Aluminum chloride catalysts--Applications

AUTHORS:

Frunze, T. M., Korshak, V. V.,  
Kurashev, V.V., Kolesnikov, G. S., Zhubanov, B. A.

SOV/62-58-6-26/37

TITLE:

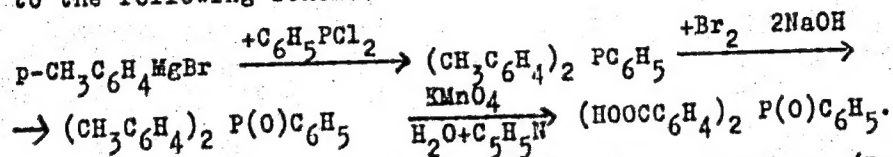
On Some Phosphorus-Containing Polyamides (O nekotorykh fosforsoderzhashchikh poliamidakh)

PERIODICAL:

Izvestiya Akademii nauk SSSR, Otdeleniye khimicheskikh nauk,  
1958, Nr 6, pp. 783 - 785 (USSR)

ABSTRACT:

In order to explain the influence exercised by the phosphorus atom upon the properties of polyamides a number of polymers was obtained by the polycondensation of bis-(p-carboxyphenyl) phenylphosphin oxides with various aliphatic and aromatic diamines. The initial acid was obtained by the authors according to the following scheme:



Polycondensation took place under the usual conditions (Ref 1).  
From the results mentioned (Tables 1,2) it may be seen that

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